

# HAZARD MITIGATION

1. USE CONSTRUCTION CLEAR ZONE DISTANCE IDENTIFIED IN TABLE 1 TO MITIGATE THE FOLLOWING HAZARDS.  
HAZARDS  
A. NON-WORKING EQUIPMENT OR VEHICLES  
B. STOCKPILED MATERIAL  
C. WORKING VEHICLES AND WORKERS (NON-FLAGGERS)  
D. OTHER OBJECTS AND FEATURES (IE: BRIDGE PARAPETS, BARRIER BLUNT ENDS, POLES)  
E. VERTICAL DROP-OFF LESS THAN 48 INCHES OR SLOPES STEEPER THAN 4:1
2. MITIGATE ALL OTHER HAZARDS OR DROP-OFFS GREATER THAN 48 INCHES WITHIN AASHTO CLEAR ZONE AS APPROVED BY THE REGION TRAFFIC ENGINEER.

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graph TD
    Start([CAN HAZARD BE REMOVED OR RELOCATED OUTSIDE AASHTO CLEAR ZONE, CAN DROP-OFF/SLOPE BE FLATTENED TO 5:1 OR FLATTER?]) -- YES --> RemoveSite[REMOVE FROM WORK SITE OR RELOCATE OUTSIDE AASHTO CLEAR ZONE, FLATTEN DROP-OFF/SLOPE]
    Start -- NO --> IsAB[IS HAZARD 'A' OR 'B'?]
    IsAB -- YES --> CanMove[CAN HAZARD BE MOVED?]
    CanMove -- YES --> Will24[WILL HAZARD BE USED WITHIN 24 HOURS?]
    Will24 -- NO --> Remove[REMOVE]
    Will24 -- YES --> MoveClear[MOVE OUTSIDE THE REQUIRED CONSTRUCTION CLEAR ZONE X 2 SEE TABLE 1 (EXAMPLE FOR 45 MPH) (6 ft. x 2 = 12 ft.)]
    CanMove -- NO --> ProtectBarrier[PROTECT WITH BARRIER]
    IsAB -- NO --> IsC[IS HAZARD 'C'?]
    IsC -- NO --> IsD[IS HAZARD 'D'?]
    IsD -- YES --> ProtectSpec[PROTECT AS PER STANDARD SPEC. SEC. 01554 ARTICLE 1.6 F]
    IsD -- NO --> IsE[IS HAZARD 'E' WITHIN CONSTRUCTION CLEAR ZONE (REFER TO TABLE 1)]
    IsE -- YES --> Is6Inch[IS HAZARD A VERTICAL GRADE SEPARATION OF 6 INCHES OR GREATER, OR IS THE SLOPE STEEPER THAN 4:1?]
    Is6Inch -- YES --> BarrierReq[BARRIER REQ'D. IN ADDITION TO STANDARD CHANNELIZING SEE NOTES 13, 14]
    Is6Inch -- NO --> Is2Inch[IS HAZARD A VERTICAL GRADE SEPARATION 2 INCHES OR GREATER]
    Is2Inch -- YES --> IsTraffic[IS TRAFFIC PERMITTED TO CROSS VERTICAL GRADE SEPARATION?]
    IsTraffic -- YES --> WarningSigns[CONSTRUCTION WARNING SIGNS W8-11 REQ'D. AT MAXIMUM 2 MILES INTERVALS]
    IsTraffic -- NO --> UseChannelizing[USE REQUIRED CHANNELIZING DEVICES]
    IsE -- NO --> UseChannelizing
    IsC -- YES --> UseChannelizing
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DETAIL AA

1. USE CURRENT EDITION OF UDOT STANDARDS AND MUTCD FOR TRAFFIC CONTROL.
2. SEE STD DWG TC 1A AND TC 1B FOR CONSTRUCTION ZONE SIGNING AND DEVICE REQUIREMENT.
3. COVER OR REMOVE NON-APPLICABLE SIGNING, BOTH EXISTING AND CONSTRUCTION SIGNS. REMOVE NON-APPLICABLE PAVEMENT MARKINGS.
4. REMOVE NON-APPLICABLE PORTABLE SIGNS OR MOVE BEYOND A DISTANCE TWICE THAT OF THE CONSTRUCTION CLEAR ZONE. (SEE TABLE 1 AND DETAIL AA).
5. REFER TO STANDARD SPECIFICATION 01554 FOR FLAGGING REQUIREMENT FOR OPERATING TRAFFIC SIGNALS.
6. USE A FULL LANE CLOSURE WHEN WORK ENCROACHES INTO A TRAFFIC LANE, UNLESS THE TRAFFIC LANE CAN BE RECREATED.
7. CLEAN AND RESTORE PAVEMENT MARKINGS AT THE END OF EACH DAY'S OPERATION, BOTH ON AND OFF THE PROJECT, THAT ARE OBSCURED BY WORK OPERATIONS.
8. LIMIT ADVISORY AND REGULATORY SPEED REDUCTION OF 10 MPH, WITH THE APPROVAL FROM THE ENGINEER. FOR REDUCTIONS EXCEEDING 10 MPH, OBTAIN APPROVAL FROM THE REGION TRAFFIC ENGINEER. USE SPEED REDUCTIONS ONLY DURING IMPACTED TIMES AND AREAS. RESTORE REGULATORY SPEED LIMIT AT LOCATIONS WHERE TRAFFIC IS NOT BEING IMPACTED BY CONSTRUCTION ACTIVITIES.
9. USE THE POSTED SPEED LIMIT PRIOR TO CONSTRUCTION TO COMPUTE THE SIGN SPACING, TAPER LENGTH, BUFFER ZONE, AND CONSTRUCTION CLEAR ZONE DISTANCE. USE THE POSTED SPEED LIMIT DURING CONSTRUCTION TO DETERMINE THE TANGENT SPACING FOR CHANNELIZING DEVICES.
10. USE PLASTIC DRUMS FOR LANE CLOSURE TAPER DEVICES FOR SPEEDS 50 MPH AND GREATER.
11. USE DOWNSTREAM TAPER FOR OPERATIONS LONGER THAN 3 DAYS.
12. PLACE ADVANCE WARNING ARROW PANEL IN THE FIRST 1/3 OF THE TAPER.
13. USE AN APPROVED CONSTRUCTION ZONE ATTENUATOR WITH TEMPORARY PRECAST CONCRETE BARRIER WHEN APPROACH ENDS ARE WITHIN AASHTO CLEAR ZONE. DO NOT USE A TRUCK MOUNTED ATTENUATOR FOR ANY PERIOD LONGER THAN 24 HOURS.
14. USE PROPER LENGTH OF NEED FOR TEMPORARY BARRIER AS PER THE REQUIREMENTS OF THE CURRENT EDITION OF THE ROADSIDE DESIGN GUIDE. USE POSTED SPEED LIMIT PRIOR TO THE CONSTRUCTION ZONE FOR THE DESIGN OF THE REQUIRED LENGTH OF NEED. USE TABLE 2 FOR THE CONSTRUCTION ZONE FLARE RATE REQUIREMENT FOR TEMPORARY BARRIER. APPROVAL FROM THE REGION TRAFFIC ENGINEER IS REQUIRED FOR MODIFICATION TO THE REQUIRED FLARE RATE.

<b>MPH</b>	<b>feet</b>
<b>40 &amp; LESS</b>	<b>3</b>
<b>45</b>	<b>6</b>
<b>50</b>	<b>6.5</b>
<b>55</b>	<b>7.5</b>
<b>60</b>	<b>8</b>
<b>65</b>	<b>8.5</b>
<b>70</b>	<b>9</b>
<b>75</b>	<b>10.5</b>

MPH	FLARE
≥70	20:1
65	18:1
60	17:1
55	16:1
50	14:1
45	10:1
<40	6:1